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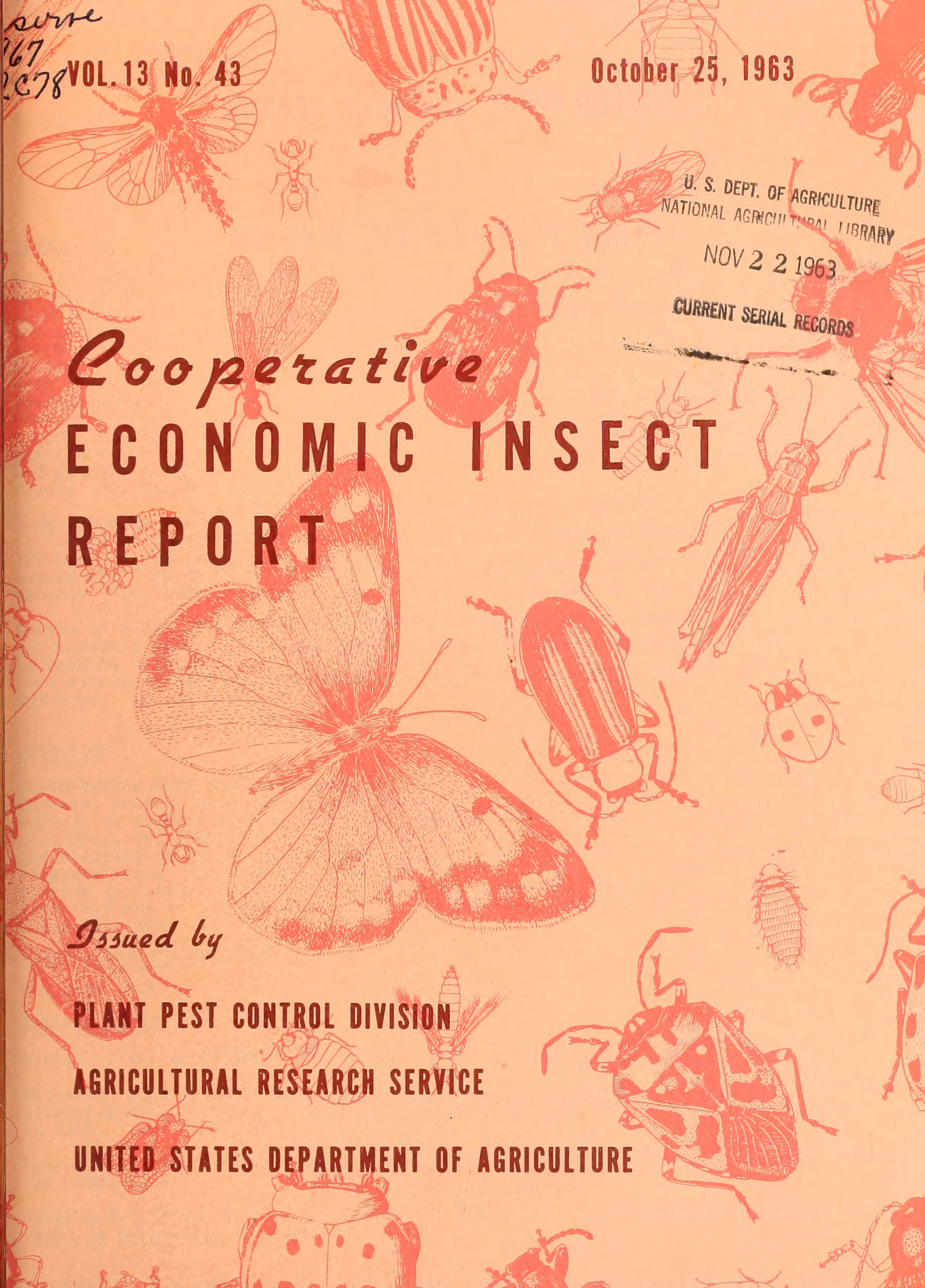
VOL. 13 No. 43

October 25, 1963



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Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

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Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20781

Volume 13 October 25, 1963 Number 43

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

SPOTTED ALFALFA APHID locally heavy in Independence County, Arkansas, and Oktibbeha County, Mississippi; continues to increase in Wisconsin and some damage observed in southeast Illinois and Bedford County, Virginia; and generally low populations observed in Kansas. (p. 1261). APPLE GRAIN APHID and ENGLISH GRAIN APHID recorded on small grains in Payne and Logan Counties, Oklahoma; appearance earlier than normal. (p. 1274). SOUTHWESTERN CORN BORER caused less lodging of corn plants in Arkansas than for past 3 years, and damage by the borer found in several Alabama counties. (p. 1262). ALFALFA WEEVIL adults continue active in Utah and Colorado, and larvae continue to feed on alfalfa in Maryland with few fields showing damage in latter State. (p. 1263). HESSIAN FLY damage to early planted wheat variable in central and northern portions of south central Kansas, and SORGHUM MIDGE caused light to heavy losses to late grain sorghum in Lea County, New Mexico. (p. 1264).

PINK BOLLWORM more general throughout Oklahoma than past 2 seasons, and specimens recovered from several Arkansas counties and Louisiana parishes. Pink bollworm infestation general in Eddy County, New Mexico, cotton; and heavy numbers of larvae still being found in lint cleaners and in cotton fields in Graham County, Arizona. (p. 1267).

Larvae of a GALL MIDGE, probably Contarinia coloradensis, caused extensive damage to ponderosa pines in area of Colorado, and INTRODUCED PINE SAWFLY caused noticeable defoliation of pine in 3 Minnesota counties. (p. 1269). Heavy populations of WALKINGSTICK defoliating oaks on Ouachita National Forest in Oklahoma. (p. 1274).

DETECTION

SOUTHWESTERN CORN BORER recorded for first time in Alabama; found in Pickens, Choctaw, Sumter, Hale, Greene and Tuscaloosa Counties. (p. 1262). New county records of significance were SMALLER EUROPEAN ELM BARK BEETLE in Ventura County, California (p. 1269); WHITE-FRINGED BEETLES in Forsyth County, Georgia; Itawamba and Prentiss Counties, Mississippi; Catawba and Cleveland Counties, North Carolina; Virginia Beach (formerly Princess Anne County), Virginia; and Liberty County, Florida (p. 1273) (Liberty County, Florida, previously reported in CEIR 13(41): 1219, but not as new county record); and IMPORTED FIRE ANT in Galveston County, Texas (p. 1273).

CORRECTIONS and ADDITIONAL NOTES

See page 1274.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1271).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Grain Sorghum, Wheat, Alfalfa, Cotton, Beef and Dairy Cows in Oklahoma in 1962. (pp. 1277-1282).

Losses in Yield of Corn Grown for Grain Due to Insects and Birds in Indiana - 1962. (pp. 1283-1284).

Insects Not Known to Occur in the United States (Indian sugarcane leafhopper (Pyrilla perpusilla (Walker)). (p. 1285).

Reports in this issue are for week ending October 18, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-OCTOBER TO MID-NOVEMBER 1963

The Weather Bureau's 30-day outlook for the period mid-October to mid-November calls for temperatures to average above seasonal normals in the eastern two-thirds of the Nation, except near normal along Gulf and South Atlantic coasts. In the western third, below normal averages are predicted, except near normal in the Pacific Northwest and along the west coast. Precipitation is expected to remain subnormal in the eastern quarter of the country (except the extreme Southeast), but substantial rains should replace dry weather over much of the central United States. Precipitation in excess of normal is anticipated in most regions west of the Continental Divide. In areas not specified, near normal amounts are in prospect.

Weather forcast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $4.80 a year, $2.40 a half year.

WEATHER OF THE WEEK ENDING OCTOBER 21

At the beginning of the week, a huge high pressure area spread over the East. Another was centered over the central Rocky Mountains. Fair weather with typical Indian summer continued over the East. Afternoon temperatures were generally in the 70's and 80's with a few 90's scattered over the central and southern Great Plains. Minimums were mostly in the 40's and 50's, except in the higher elevations of the northern Appalachians and at a few stations in New York and New England where they dropped to freezing or near freezing. In the West, minimum temperatures ranged from the 30's in the mountains and higher latitudes to the 50's along the Mexican border. An upper level low pressure system, which separated the two high pressure areas, produced some generous rains over the central Great Plains. Wichita, Kansas, received 1.10 inches of rain on Wednesday. Des Moines, Iowa, received 1.87 inches on Thursday, and Concordia, Kansas, received 1.11 inches on Friday. Lesser amounts fell daily from Wednesday to Friday over a wide area which extended from Kansas to Lake Michigan.

At midweek, an intense storm system - the remanents of a tropical storm from the Pacific - provided rains over most of California and inland as far as the southern Rocky Mountains. Needles, California, received 1.10 inches of rain on Friday and 1.18 inches fell at Phoenix, Arizona, on Saturday. Another storm moved into the Far Northwest about midweek. It produced light rains over the Northwestern States. When it reached the Great Plains, they had become loaded with moist tropical Gulf air. Precipitation fell Sunday over a wide area extending from the Great Basin to Wisconsin and from Montana to Oklahoma. Tulsa, Oklahoma, received 1.91 inches and 1.37 inches fell at Wichita, Kansas, on Sunday. No important rain fell during the week east of a line from Port Arthur, Texas, to Cleveland, Ohio, except at Hatteras, North Carolina, and vicinity, where more than 3 inches fell on Saturday and Sunday in connection with hurricane Ginny which was remaining almost stationary about 125 miles southeast of Hatteras. Drought continued over the eastern United States. In some States, it was the 5th week of dry weather and the longest dry spell of record. Numerous woods and forests were closed to the public because of the extreme danger of forest fires. Stockwater supplies ran low and ponds and wells dried in some areas. In some areas, where light rains fell, runoff was insufficient to raise stream levels. With warm daytime temperatures, abundant sunshine, and low humidity, evaporation increased, intensifying the drought and the forest fire danger became more frightening. Precipitation totaled less than an inch over most of the West. Some spots along the Canadian border received no rain. Some spots in the southern Rockies received more than 1 inch. The total for Phoenix, Airzona, was 1.43 inches.

Temperatures averaged below normal over two small areas. In the interior valleys of California, temperatures averaged from 1° to 3° below (continued on page 1276)

CEREAL AND FORAGE INSECTS

SPOTTED ALFALFA APHID (Therioaphis maculata) - WISCONSIN - Continues to increase; 4-5 fold increase noted since last report (CEIR 13(42):1238) at observation field near Brodhead, Green County; ranged 1,200-1,500 per sweep on October 15. Combination of drought and aphids causing severe damage to fields in area, with alates composing 5 percent of population. Predators and disease continue scarce; small nymphs more common than preceding week. Specimens found in scattered fields in Sauk, Dane, Green and Rock Counties; many of which previously not infested by this species. Populations in previously infested fields have also shown increase. (Wis. Ins. Sur.). ILLINOIS - Varied 6-440 (average 176) per sweep in alfalfa in Hardin and Pope Counties (extreme southeast) and 0-0.8 in Johnson County (south central). Although some alfalfa in Hardin-Pope County area sticky with honeydew and showing some slight discoloration and leaf curling, no leaf drop apparent. Alfalfa in area not suffering from drought as much as in Johnson County. (Ill. Ins. Rpt.). NEBRASKA - Ranged 20-40 per 10 sweeps in southwestern areas bordering Kansas and Colorado State lines. Averaged approximately 3 per 10 sweeps in Dawson County. (Bergman). KANSAS - Averaged less than one per sweep on alfalfa in southwestern area. No damage noted on seedling or established alfalfa. (Peters). ARKANSAS - Heaviest infestation observed since pest first recorded in State noted in Oil Trough area, Independence County (northeast). Aphids too numerous for accurate count when taken in sweep net or other methods; several hundred per square foot shaken from plants. Honeydew heavy. (Ark. Ins. Sur.). MISSISSIPPI - Large numbers noted on alfalfa at State College, Oktibbeha County, October 17. (Ouzts). VIRGINIA - All stages present in large numbers in field of newly seeded alfalfa in Bedford County; damage moderate. (Amos, Boone; Oct. 9).

YELLOW CLOVER APHID (Therioaphis trifolii) - WISCONSIN - Alates appearing. (Wis. Ins. Sur.).

PEA APHID (Acyrthosiphon pisum) - UTAH - Very numerous on alfalfa in Centerville-Farmington area, Davis County. (Knowlton). NEBRASKA - Ranged 20-150 per 10 sweeps in southwestern area alfalfa. (Bergman). WISCONSIN - Continues to increase in southern counties; ranges 100-500 per sweep in majority of alfalfa. In fields where populations low, larvae of lady beetles and lacewings average 3-6 per sweep; Nabis ferus also common in many fields. (Wis. Ins. Sur.). ILLINOIS - Varied 0.2-260 (average 64) per sweep in alfalfa in Hardin and Pope Counties (extreme southeast) and 8-400 (average 204) per sweep in Johnson County (south central). (Ill. Ins. Rpt.). OHIO - Populations remain extremely high in Wayne County, northeast; counts often as high as 300 per sweep. (Treece). Damage serious in many alfalfa fields throughout northwest; counts remain high with host plants brown and dying. Injury serious in many alfalfa fields in Seneca, Wyandot, Hancock, Wood and Sandusky Counties. (Treece, Lyon). MARYLAND - Ranged 0-12 per sweep in 6 alfalfa fields checked in Frederick County. (U. Md., Ent. Dept.). DELAWARE - Remains abundant on alfalfa in an area of New Castle County. (Burbutis).

PLANT BUGS - UTAH - Lygus spp. averaged 3 per 25 sweeps in alfalfa in Logan-Smithfield area, Cache County; 20 percent nymphs, largely third instar. (Knowlton). NEBRASKA - Lygus lineolaris adults per 10 sweeps in alfalfa were 10-20 in southwestern area and 6 in Dawson and Phelps Counties. (Bergman). ILLINOIS - Adult counts per 100 sweeps in alfalfa in Hardin and Pope Counties (southern area) as follows: Adelphocoris lineolatus 5-10 (average 9); Adelphocoris rapidus 10-20 (average 14); Lygus lineolaris 10-400 (average 138). Nymphs of these 3 species ranged from 0 to 20 (average 6) per 100 sweeps. (Ill. Ins. Rpt.). MARYLAND - L. lineolaris adults ranged 1-2 per sweep in Frederick County alfalfa. (U. Md., Ent. Dept.).

CHINCH BUG (Blissus leucopterus) - VIRGINIA - Severe on one-half to one-third of bluegrass lawn in Grundy, Buchanan County. Large areas of grass dead; adjoining areas dying. (Tarpley, Abbott; Oct. 11).

A COREID BUG (Liorhyssus hyalinus) - CALIFORNIA - Nymphs and adults of this species and Lygus sp. medium on sorghum in Robbins, Sutter County. (Cal. Coop. Rpt.).

MEADOW SPITTLEBUG (Philaenus spumarius) - MARYLAND - Adults ranged 0-5 per 5 sweeps in 6 alfalfa fields checked in Frederick County. (U. Md., Ent. Dept.).

POTATO LEAFHOPPER (Empoasca fabae) - ILLINOIS - Adults varied 0-250 (average 55) and nymphs 0-400 (average 45) per 100 sweeps in alfalfa in Hardin and Pope Counties. (Ill. Ins. Rpt.). WISCONSIN - Nymphs and adults remain common in many alfalfa fields in southern part of State; counts as high as 15 per sweep. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Apparently decreasing in alfalfa fields in Graham, Pinal and Maricopa Counties; ranged 200-250 per 100 sweeps. (Ariz. Coop. Sur.).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - WISCONSIN - Adults averaged 6 per 10 sweeps in grain in Spring Green area, Sauk County. (Wis. Ins. Sur.).

RICE DELPHACID (Sogata orizicola) - FLORIDA - Sweepings on Kreamer Island, Palm Beach County, revealed 5 specimens in one collection; rice being plowed under. (PPC, South. Reg., Sept. Rpt.).

CORN EARWORM (Heliothis zea) - ARIZONA - Light to moderate and causing some damage to sorghum in Yuma County. (Ariz. Coop. Sur.). MICHIGAN - Larval injury to field corn in Gratiot, Isabella, Wayne, Monroe, Lenawee, Hillsdale and Calhoun Counties extremely low this season. Only 2 ears from a Gratiot County field showed slight injury; 1,045 ears sampled from 36 fields. (Janes, Newman). ILLINOIS - Damage survey attempted in southern part of State; however, as 25-30 percent of corn harvested, accurate survey could not be made. As this is first attempt at this type of survey, trial survey in southeast district showed 0.1 percent damage to field corn. (Ill. Ins. Rpt.). NORTH CAROLINA - Damaged almost all ear tips in field of corn in Jackson County. Det. by D. A. Mount. (Gibson). ALABAMA - Although few in number, full-grown larvae noted in most extremely late sweet and field corn in western counties. No moths noted. (McQueen).

ALFALFA CATERPILLAR (Colias eurytheme) - UTAH - Few noted in alfalfa fields in Davis and Weber Counties. Moderately numerous in some alfalfa in Logan-Smithfield area, Cache County. (Knowlton). ARIZONA - Decreasing in most alfalfa in Graham, Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ALABAMA - Found for first time in State in Pickens County in fall of 1962. Cooperative survey this season showed pest and damage to corn in Choctaw, Sumter, Hale, Greene and Tuscaloosa Counties. Not found in Mobile, Bibb, Washington and Marengo Counties. Counties yet to be surveyed in 1963 are Jefferson, Walker, Fayette, Lamar, Marion, Franklin, Colbert and Lauderdale; survey to be completed in Perry County. If pest found in these counties, further survey to east will be necessary to determine southern and eastern penetration of pest into State. (Henderson, McQueen). ARKANSAS - Amount of lodging of corn from girdling less than past 3 years; same areas surveyed each of 4 years. Few summer phase (spotted) larvae found in corn of later planting dates; however, all larvae found, below ground level. (Ark. Ins. Sur.). NEW MEXICO - Larvae common in stalks and roots of corn plants checked in Quay, Curry and Roosevelt Counties. (N. M. Coop. Rpt.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - ALABAMA - Survey made in 11 counties; very light infestations in corn noted only in Tuscaloosa and Perry Counties. (McQueen). Infested 30 percent of grain sorghum in several areas of Lauderdale County; much heavier in isolated areas of some fields. (Buttram).

BEET ARMYWORM (Spodoptera exigua) - TEXAS - Heavy, localized population damaging oats in Falls County. (Wood). ARIZONA - Present in some alfalfa in Yuma and Maricopa Counties; averaged 20 per 100 sweeps. (Ariz. Coop. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - TEXAS - Light to heavy populations damaging lawns in Brazos County. (Newton). ALABAMA - Completely destroyed 2-acre field of sweet corn in Bibb County. Earlier damage noted in several western counties. (McQueen). Stripping kudzu in isolated areas of Mobile County. (Bolton, Seibels, et al.).

A NOCTUID MOTH (Stibadium spumosum) - CALIFORNIA - Larvae heavy in flowers of common sunflower in Los Banos, Merced County. (Cal. Coop. Rpt.).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - GEORGIA - Light on soybeans in northeast and southeast areas. (Johnson).

A FIERY SKIPPER (Hylephila phylaeus) - CALIFORNIA - Larvae heavy on grass roots and sod in Lafayette, Contra Costa County. (Cal. Coop. Rpt.).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Larvae continue to feed on alfalfa in most sections of Frederick County; ranged 0.6-50 per 50 sweeps, with few fields showing conspicuous injury. (U. Md., Ent. Dept.). ILLINOIS - No adults, larvae nor damage observed in alfalfa in Hardin, Pope or Johnson Counties, southern area. (Ill. Ins. Rpt.). COLORADO - Adults appearing in alfalfa fields in northeastern area; range 6-10 per 100 sweeps. (Hantsbarger). UTAH - Adults active during warm periods of the day and sometimes numerous in Logan-Smithfield area alfalfa fields, Cache County. (Knowlton).

CLOVER LEAF WEEVIL (Hypera punctata) - WISCONSIN - First and second stage larvae appearing in alfalfa and clover. (Wis. Ins. Sur.).

CLOVER ROOT CURCULIO (Sitona hispidula) - WISCONSIN - Common in most alfalfa in Dane, Sauk, Green, Rock and Iowa Counties; ranged as high as 5 per sweep in some fields. (Wis. Ins. Sur.).

A WEEVIL (Sitona scissifrons) - WISCONSIN - Present in alfalfa in Sauk County. (Wis. Ins. Sur.).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - OHIO - Adults feeding on silks of treated and untreated field corn near Van Wert, Van Wert County, northwest; populations widespread. (Oetzel). Observed feeding on gladiolus flowers near Bowling Green, Wood County, northwest; adults present since last summer. (Jones). Low adult counts noted in red clover in Defiance County, northwest. (Lyon).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - NEBRASKA - Adults very active in 12 fields of corn in Keith County. (Bergman).

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Moderate to heavy on soybeans in northeast and southeast areas. (Johnson, Freeman). NORTH CAROLINA - Damaged about one-quarter acre of 3-acre field of newly seeded alfalfa. (Love, Robertson).

A CERAMBYCID BEETLE (Derobrachus brevicollis) - GEORGIA - Infestation ranged light to moderate in Bahia grass in Early County. (Cooper, Oct. 1).

A SCARAB (Cyclocephala sp.) - CALIFORNIA - Larvae heavy in grass in golf course in Oroville, Butte County. Conditions have been very favorable past 2 years; many infestations being reported. (Cal. Coop. Rpt.).

FLEA BEETLES - NEW MEXICO - Heavy population killing out wheat in small area near Clovis, Curry County. (N. M. Coop. Rpt., Oct. 11). NORTH CAROLINA - Severely damaged approximately one-half of 6-acre field of rye near Snow Hill, Greene County; rye about 5 inches high. (Robertson).

A WIREWORM - MICHIGAN - Larvae of undetermined species caused approximately 15 percent reduction of stand of wheat in Clinton County field. (Janes).

A THRIPS (Frankliniella occidentalis) - CALIFORNIA - Adults heavy on sorghum in Witter Springs, Lake County. (Cal. Coop. Rpt.).

GRASSHOPPERS - NORTH DAKOTA - Adults remain active along roadsides in southwest; ranged 3-10 per square yard near Mott, Hettinger County. (N. D. Ins. Sur.). UTAH - Numerous in small areas, but general population decreased greatly in central and northern areas. (Knowlton). WISCONSIN - Melanoplus femurrubrum continues common; dissected females show continued egg production. Many showing signs of wing chewing. Eggs difficult to find in alfalfa. (Wis. Ins. Sur.).

HESSIAN FLY (Phytophaga destructor) - KANSAS - Percent early planted wheat plants infested in central and northern portions of south central area ranges 0-60; average about 7.5 percent plants infested. Heaviest infestation generally in north central area. (Somsen).

SORGHUM MIDGE (Contarinia sorghicola) - NEW MEXICO - Light to heavy losses reported in late grain sorghum in Lea County. (N. M. Coop. Rpt.).

BROWN WHEAT MITE (Petrobia latens) - COLORADO - Ranged light to moderate in winter wheat fields in Adams County. (Hantsbarger).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - ALABAMA - Present in varying degrees in 55 corn fields surveyed in 11 west and southwest counties; 5-10 percent of cornstalks completely "hulled" out and falling in some fields, especially in new ground areas and several fields near old home sites. No damage noted to grain or ears. Downed cornstalks will affect harvest. (McQueen).

SOYBEAN CYST NEMATODE (Heterodera glycines) - Cysts recovered from fields in Pender, Currituck and Perquimans Counties, NORTH CAROLINA. Samples taken in Fayette County, TENNESSEE, revealed additional 1,035 acres infested. Cysts recovered from samples taken in Tunica County, MISSISSIPPI, adjacent to infested area in De Soto County. (PPC, South. Reg., Sept. Rpt.).

A SNAIL (Hawaiia minuscula) - CALIFORNIA - Heavy on lawn and sidewalk locally in Napa, Napa County. (Cal. Coop. Rpt.).

FRUIT INSECTS

RED-HUMPED CATERPILLAR (Schizura concinna) - NORTH CAROLINA - Larvae feeding on apple trees in Henderson County. Det. by D. A. Mount. (Bennett).

PEAR PSYLLA (Psylla pyricola) - WASHINGTON - Moderate to heavy on pears at Bellingham, Whatcom County. All instars present; fruit blackened with honeydew. (Holland).

SAN JOSE SCALE (Aspidiotus perniciosus) - ALABAMA - Extremely heavy on few apple trees in Lee County; some infestation noted on nearby pear trees. (Bagby).

ERIOPHYID MITES - CALIFORNIA - Eriophyes pyri and Epitrimerus pyri heavy on pear trees in Healdsburg, Sonoma County. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Medium in black walnuts in Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - TEXAS - Larvae found on pecan trees in Cooke County. (Turney). ALABAMA - Stewart pecans under trees examined at 3 locations in Tallapoosa County; 80 percent of nuts infested. (Barwood, Harris).

A CARPOSINID MOTH (Bondia comonana) - CALIFORNIA - Larvae medium on trunks of almonds in Turlock, Stanislaus County. (Cal. Coop. Rpt.).

BLACK PECAN APHID (Melanocallis caryfoliae) - TEXAS - This species and Monellia spp. occurring in large numbers on pecan in Cooke and McLennan Counties. (Turney, Meisch).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - ARIZONA - Damaging grapes in many home gardens in Maricopa County. (Ariz. Coop. Sur.).

GRAPE LEAF FOLDER (Desmia funeralis) - CALIFORNIA - Medium on wild grapevines in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

GRAPE WHITEFLY (Trialeurodes vittatus) - CALIFORNIA - Nymphs light on grape leaves in Redwood Valley, Mendocino County. (Cal. Coop. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Three male specimens taken, one positive and 2 tentatively identified this species from Baja California; 4,806 trap inspections made of 1,615 traps on 840 properties in State. Total of 26,150 trees sprayed on 5,116 properties in Municipios Ensenada and Tijuana, Baja California. Fifth eradication insecticide application started in Ensenada and fourth well underway in Tijuana. (PPC, Mex. Reg., Sept. Rpt.). ARIZONA - Four adults taken in McPhail traps in Nogales area October 9. This makes total of 10 flies trapped in Nogales this year. (Ariz. Coop. Sur.).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - MEXICO - Total of 4,865 trap inspections made of 2,460 traps in States of Chiapas, Veracruz, Tamaulipas, Baja California, Sonora and Sinaloa; all traps negative. (PPC, Mex. Reg., Sept. Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - All citrus trees in Edinburg, Hidalgo County, inspected and found negative; surveys in commercial groves in county negative also. (PPC, South. Reg., Sept. Rpt.). MEXICO - Biological Control Zone - Inspection of 56,830 citrus trees on 247 properties in State of Tamaulipas showed 1,589 trees infested on 122 properties in 5 municipios. Light on 1,852 trees and medium on 7 trees. Biological control in area generally good. Reports indicate necessity of parasite liberations on 25 properties in 12 States and Territory of Baja California and possibility of parasite captures on 32 properties. In Apatzingan, Michoacan, and Rio Verde, San Luis Potosi, 92,200 specimens of a parasitic eulophid (Prospaltella opulenta) captured for release in Obregon, Sonora; Gutierrez Zamora, Veracruz; and Merida, Yucatan. Considerable improvement in biological control noted in State of Chiapas since June. Chemical Control Zone - No infestations found in States of Nuevo Leon and Sonora; 81,946 citrus trees on 318 properties inspected. (PPC, Mex. Reg., Sept. Rpt.).

CAMPHOR SCALE (Pseudaonidia duplex) - FLORIDA - Light on leaves and fruit of orange at 2 locations in Orange City, Volusia County. (Roberts, Oct. 3).

CALIFORNIA RED SCALE (Aonidiella aurantii) - CALIFORNIA - Heavy on citrus in Napa, Napa County. (Cal. Coop. Rpt.).

ORANGE-DOG (Papilio cresphontes) - ARIZONA - Larval increases found in oranges and related citrus in Pinal and Maricopa Counties. Damage heavy in some areas. (Ariz. Coop. Sur.).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Infested leaves of sweet orange (Citrus sinensis) at 2 different locations in Electra, (Condo, Graham; Oct. 10), and at Weirsdale, Marion County (Graham, Oct. 8).

TRUCK CROP INSECTS

PSYLLIDS - COLORADO - Becoming heavy on remaining tomatoes in Fort Collins area, Larimer County. (Simpson).

POTATO TUBERWORM (Gnorimoschema operculella) - VIRGINIA - Infesting potato tubers locally in Louisa County. (Tarpley, Hunter).

HORNWORMS (Protoparce spp.) - MARYLAND - Larvae abundant on garden planting of tomatoes at Havre de Grace, Harford County. (U. Md., Ent. Dept.).

GRANULATE CUTWORM (Feltia subterranea) - CALIFORNIA - Larvae heavy on potato plantings in Arvin, Kern County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Light to moderate in lettuce fields in Yuma and Maricopa Counties, and in Red Rock area of Pinal County; ranged 30-40 per 100 plants in many fields. (Ariz. Coop. Sur.). FLORIDA - Infested 32 percent of 200 sampled cabbage plants at Sanford, Seminole County; damage minor; no other insects observed. (Desin).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - ALABAMA - Heavy on turnips in home garden areas of Tallapoosa, Coosa, Chambers, Autauga and Bibb Counties. (Barwood et al.).

CABBAGE APHID (Brevicoryne brassicae) - OHIO - Nymphs and adults heavy on cabbage plants in home garden in Morrow County. (Reese).

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Heavy on green beans in Evans and Tattnall Counties. (Freeman, Oct. 12). MICHIGAN - Adults heavy on young volunteer beans in previously harvested Gratiot County field; feeding evidence indicates larvae completed development on these plants. (Janes). OHIO - All stages noted in home garden in Mahoning County, northeast; approximately 300 adults collected from lima and wax garden beans. Serious plant injury present. (Cibula).

COWPEA CURCULIO (Chalcodermus aeneus) - ALABAMA - During recent experiment in Lee County, 50-100 larvae collected for each 200 pods of field peas examined on uncontrolled plots. (Bass).

COWPEA APHID (Aphis craccivora) - ALABAMA - Numerous on cowpeas in Mobile, Bibb, Hale and other counties where plants remain green. (Seibels, Bolton, et al.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Heavy on string beans in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

MITES - NEW MEXICO - Problem on beans in home gardens in Las Cruces area, Dona Ana County. (N. M. Coop. Rpt., Oct. 11).

GREEN PEACH APHID (Myzus persicae) - UTAH - Numerous on leaves of sugar beets at Smithfield, Cache County. (Knowlton).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Present in Yuma and Maricopa County lettuce fields; ranged 10-20 per 100 plants. (Ariz. Coop. Sur.).

TOMATO FRUITWORM (Heliothis zea) - ARIZONA - Light larval populations damaged heading lettuce in Pinal and Maricopa Counties. (Ariz. Coop. Sur.). COLORADO - Adults appearing in small numbers at lights in Larimer County. (Thatcher).

SQUASH BUG (Anasa tristis) - OHIO - Nymphs and adults noted sucking sap from leaves and stems of squash at roadside market in Sandusky County. (Lyon).

HORNED SQUASH BUG (Anasa armigera) - MARYLAND - Abundant on squash, gourd and pumpkin in garden at Havre de Grace, Harford County. (U. Md., Ent. Dept.).

MELON APHID (Aphis gossypii) - CALIFORNIA - Adults medium on cantaloup plantings in Los Banos, Merced County. (Cal. Coop. Rpt.).

DRIED-FRUIT BEETLE (Carpophilus hemipterus) - CALIFORNIA - Medium on cantaloup fruit in Los Banos, Merced County. (Cal. Coop. Rpt.).

AN EARWIG (Euborellia sp.) - CALIFORNIA - Medium on cantaloup fruit in Los Banos, Merced County. (Cal. Coop. Rpt.).

A LEAF MINER FLY (Liriomyza sp.) - FLORIDA - Infested 64 percent of 300 celery plants at Sanford, Seminole County; damage minor. (Desin).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - In LOUISIANA, 21 newly infested properties found in previously known infested parishes. One newly infested property found in Perry County, MISSISSIPPI; seedbed cleaned and destroyed by burning; nearby plantings dusted. No infestations found in fields where dusting program followed in GEORGIA; unusually heavy infestation found in wild hosts in Albany, Dougherty County. Herbicide treatments continue in Charleston, Beaufort and Jasper Counties, SOUTH CAROLINA; heavy infestation of wild hosts on Sullivans Island, Charleston, dusted with good results. (PPC, South. Reg., Sept. Rpt.).

TOBACCO WIREWORM (Conoderus vespertinus) - NORTH CAROLINA - Only species collected from sweetpotato test plots near St. Paul, Robeson County; 8 larvae collected. (Mount).

MORNING-GLORY LEAF MINER (Bedellia somnulentella) - CALIFORNIA - Severely mining sweetpotato leaves in Madera, Madera County. (Cal. Coop. Rpt.).

AN APHID (Aphis rubifolii) - FLORIDA - Moderate on leaves of blackberry at Groveland, Lake County. (Henderson, Oct. 3).

DRYBERRY MITE (Phyllocoptes gracilis) - WASHINGTON - All stages attacking thornless blackberries in 12 backyard plants at Grandview, Yakima County. (Cone).

COTTON INSECTS

BOLLWORM (Heliothis zea) - TEXAS - Scattered, light to heavy infestations occurring in high and rolling plains areas in western part of State. Control about ceased as cotton rapidly reaching maturity. (Rummel). ARIZONA - Populations remain in top crop. Damage continues in top bolls in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - Heavy infestations apparent from lint-cleaner inspections in Gonzales and Lavaca Counties, TEXAS; infestation in Coyanosa area, Pecos County, still very heavy. Gin-trash and lint-cleaner inspections made in 11 central and southern OKLAHOMA counties; specimens recovered in all instances. Specimens recovered for first time this season in ARKANSAS in Columbia, Howard, Lawrence, Little River, Lonoke and Yell Counties. Specimens also recovered for first time this season in LOUISIANA in Caddo, De Soto, Rapides and Sabine Parishes. Lint-cleaner inspections made in 26 MISSISSIPPI counties negative. In GEORGIA, 2 gin-trash machines used; all inspections including lint cleaner negative. Limited lint-cleaner inspections in the CAROLINAS negative. (PPC, South. Reg., Sept. Rpt.). ARKANSAS - Recovered from gin trash in Woodruff County, for new county record. (Ark. Ins. Sur.). Inspections negative in PPC Western Region except in eastern ARIZONA and eastern NEW MEXICO. In latter State, bloom and boll inspections made. (PPC, West. Reg., Sept.Rpt.). ARIZONA - Heavy numbers still being found on lint cleaners and in cotton fields in Graham County. Adults taken in light traps near Florence, Pinal County. Exit holes found in stub cotton fields. (Ariz. Coop. Sur.). NEW MEXICO - Larvae found in waste collected at cotton gin in southern Dona Ana County, October 11. Infestation general in cotton fields in Eddy County; heaviest in southern part of county. Growers concerned with late buildup. (N. M. Coop. Rpt.).

COTTON LEAFWORM (Alabama argillacea) - GEORGIA - Heavy on cotton in Lowndes County. (Zeigler). ARKANSAS - Moths observed about lights at night in several areas of northeast and east central sections; no larvae found. Cotton too far advanced for damage to occur. (Ark. Ins. Sur.). NEW MEXICO - Larvae completely defoliated cotton plants where controls not used in several Lea County fields during late September and early October. (N. M. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Large numbers still being found in fields where defoliation has not occurred in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

CELERY LEAF TIER (Udea rubigalis) - CALIFORNIA - Larvae heavy in gin trash in Blythe, Riverside County. (Cal. Coop. Rpt.).

BOLL WEEVIL (Anthonomus grandis) - NEW MEXICO - None found during inspection of gin trash machines in Eddy and Dona Ana Counties. Pest has not yet been found in State. (N. M. Coop. Rpt.).

COTTON APHID (Aphis gossypii) - ARIZONA - Moderate populations causing some damage to top crop in Yuma County. (Ariz. Coop. Sur.).

MITES - NEW MEXICO - Several heavy infestations noted in Chaves and Eddy County cotton fields. (N. M. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - GEORGIA - Moderate on loblolly pine in Macon and Dooly Counties. (Brown, Roberts; Oct. 11). ALABAMA - Badly damaged 2 plantings of 5 to 7-year-old loblolly pines on approximately 140 acres near Atmore, Escambia County; 90-100 percent of tips killed back 1-7 inches. Other, smaller damaged areas noted in roadside plantings in Autauga and Tuscaloosa Counties. No larvae found, but large numbers of pupae present. (McQueen). Inspection of 30-acre evergreen nursery near Tanner-Williams community on October 3 showed 20-acre plot of young Scotch pines heavily infested with this pest, as well as Ips spp. and Neodiprion lecontei. Almost 100 percent of stand infested with these 3 species. Small yellow jackets (Vespula vulgaris) and large wasps (Polistes rubiginosus) swarming in large numbers about resinous pitch dripping from wounds, making inspection difficult. (Seibels, Bolton).

A PINE CONE MOTH (Laspeyresia piperana) - CALIFORNIA - Larvae heavy in cones of ponderosa pines in Bass Lake and Mammoth Pool areas of Sierra National Forest. An unspecified cone resin midge also present. (Mount, Cooley; USFS).

SPRUCE NEEDLE MINER (Taniva albolineana) - COLORADO - Causing some severe but scattered damage to blue spruce in Fort Collins, Larimer County. (Thatcher).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - NORTH CAROLINA - Continues active in epidemic area of Davidson County and surrounding counties. New spots appearing in Stokes, Rowan, Randolph, Guilford, Yadkin and Davidson Counties; active in several large spots in northeastern Vance and northwestern Warren Counties. Individual large spots also found in Gates and Nash Counties. (For. Pest Newsltr.).

WESTERN PINE BEETLE (Dendroctonus brevicomis) - CALIFORNIA - Local populations on private land causing fading and death in several Coulter pines in Corte Madera area, Cleveland National Forest. This is first report of damage in this area. (Cal. Coop. Rpt., USFS).

AN ENGRAVER BEETLE (Ips avulsus) - NORTH CAROLINA - Caused primary damage that resulted in death of numerous trees during late summer in Vance, Warren, Northampton and Gates Counties; attacked tops of trees. Larger Ips spp. and Dendroctonus spp. then entered lower parts of these trees. Up to 50 trees killed in many spots.

Activity ceased in most instances, except Dendroctonus spp. remain active in bases of trees. (Mount).

PINE APHIDS (Cinara spp.) - WISCONSIN - Cinara sp. very common on needles of red pine in western Dane and Sauk Counties. Alates present and eggs being laid October 16. (Wis. Ins. Sur.). VIRGINIA - C. strobi infesting white pine at a location in Gloucester County. (Tarpley, Goode; Oct. 7).

A GALL MIDGE (probably Contarinia coloradensis) - COLORADO - Larvae caused extensive damage to ponderosa pines. Damage observed from Colorado Springs, El Paso County, north to Colorado-Wyoming State line on trees of front range foothills. (Thatcher).

INTRODUCED PINE SAWFLY (Diprion similis) - MINNESOTA - Feeding by second generation continues in Brainerd-Crosby area, Crow Wing County; defoliation quite noticeable. Reported in Meeker and Pine Counties on large white pine; feeding damage very evident. (Minn. Ins. Rpt., Oct. 14).

CALIFORNIA OAKWORM (Phryganidia californica) - CALIFORNIA - Pupae heavy on trunks of oaks in San Leandro, Alameda County. (Cal. Coop. Rpt.).

FALL CANKERWORM (Alsophila pometaria) - NORTH DAKOTA - Female activity continues in Fargo area, Cass County; 187 and 123 females respectively, collected from trunks of 2 large elms on October 18. Eight males also collected. Moths taken below bands placed on trunks. (Post).

WHITE-LINED SPHINX (Celerio lineata) - CALIFORNIA - Heavy larval populations defoliating desert plants in Morongo Valley, Riverside County. Early rains caused plant growth at this time rather than in spring which is normal time of occurrence for species. (Cal. Coop. Rpt.).

A NOTODONTID MOTH (Datana sp.) - TEXAS - Larvae continue to cause considerable damage to oaks in Brazos County area. (Meisch).

GYPSY MOTH (Porthetria dispar)- A few male adults noted in flight in Rutland and Addison Counties, VERMONT, as late as September 21; nine males caught in experimental traps during week of September 23. About one-half of the traps removed in State. A few egg clusters found on nursery properties in southern New England; however, most egg clusters located on border areas some distance from nursery stock. Four egg masses removed from 2 shipments of collected nursery stock in CONNECTICUT; 16 shipments inspected. Traps removed in NEW YORK except in mountainous sections of northern area. Throughout NEW JERSEY, 259 moths collected from 154 traps located in Sussex, Passaic, Warren, Morris, Bergen and Somerset Counties. (PPC, East. Reg., Sept. Rpt.).

NORWAY-MAPLE APHID (Periphyllus lyropictus) - OHIO - Heavy throughout several areas in State. On 4 maples observed in Wayne County (northeast), counts approximately 8-10 young nymphs per stem mother, with 20-25 stem mothers per leaf. Stem mothers moving by hundreds on limbs and trunks of these trees. (Lyon).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - CALIFORNIA - Adults medium on Chinese elms at Thousand Oaks, Ventura County. This is apparently first record of infestation in Ventura County. (Cal. Coop. Rpt.).

TOBACCO BUDWORM (Heliothis virescens) - CALIFORNIA - Larvae heavy on Proboscidea sp. in Mission San Jose, Alameda County. This species more prevalent this season than in past years; appears to be including more host plants in its range. (Cal. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - TEXAS - Moderate numbers appearing on shrubs in Brazos County. (Newton).

A LEAF ROLLER MOTH (Platynota stultana) - CALIFORNIA - Larvae heavy on prostrate juniper, barberry and aralia in Oroville, Butte County. (Cal. Coop. Rpt.).

A LEAF TIER (Udea profundalis) - CALIFORNIA - Heavy on yard plants and shrubs in Dos Palos, Merced County. (Cal. Coop. Rpt.).

JAPANESE BEETLE (Popillia japonica) - DELAWARE - Adults still feeding on roses in an area of New Castle County. (Bray).

FULLER ROSE BEETLE (Pantomorus godmani) - GEORGIA - Caused moderate defoliation of rose and azalea in Emanuel County. (Ashley, Oct. 11).

A LEAF BEETLE (Disonycha limbicollis) - CALIFORNIA - Adults heavy on Polygonum coccineum at the West Nice Boat Landing, Nice, Lake County. (Cal. Coop. Rpt.).

TWO-STRIPED WALKINGSTICK (Anisomorpha buprestoides) - GEORGIA - Probably this species, caused almost complete defoliation of 50 percent of privet, aucuba and other plants in town of Stone Mountain, De Kalb County. (Vanderford, Oct. 11).

APHIDS - CALIFORNIA - Pterocomma smithiae adults and nymphs heavy on willows in Quincy, Plumas County. Macrosiphoniella sanborni heavy and damaging ornamentals in Woodland, Yolo County. (Cal. Coop. Rpt.). MICHIGAN - Various species continue numerous on dogwood, chrysanthemum and other ornamentals in Ingham County. (Wells). OHIO - Undetermined species heavy on most willows throughout northwest area. (Bell, Lyon).

CAMPHOR SCALE (Pseudaonidia duplex) - FLORIDA - Found on the following new hosts at Barberville, Volusia County: Confederate-rose (Hibiscus mutabilis), golden-rain-tree (Koelreuteria sp.), grape (Vitis sp.), ivy (Hedera sp.), loquat (Eriobotrya japonica), and arrowroot (Maranta arundinacea). Most scales males; usually found on upper surface of leaf along midrib. Approximately 50 percent of scales parasitized. Females found on confederate-rose and grape. Also found infesting camellia, firethorn, ligustrum, and orange. (Roberts, Oct. 11).

Coccids in Florida - Fiorinia theae severe on leaves of Camellia sasanqua at Wauchula, Hardee County (Lamb, Oct. 9); Ceroplastes ceriferus moderate on stem and leaves of Podocarpus nagi at Apopka, Orange County (Musgrove, Sept. 27); Ceroplastes floridensis moderate to severe on Pyracantha sp. at Eau Gallie, Brevard County (Levan, Sept. 18).

CYCLAMEN MITE (Steneotarsonemus pallidus) - CALIFORNIA - Light on household African-violets and in a commercial establishment in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

AN ERIOPHYID MITE (Aculus massalongoi) - WASHINGTON - Seriously bronzing lilac foliage at Pullman, Whitman County. Det. by H. H. Keifer. (Telford, Oct. 11).

INSECTS AFFECTING MAN AND ANIMALS

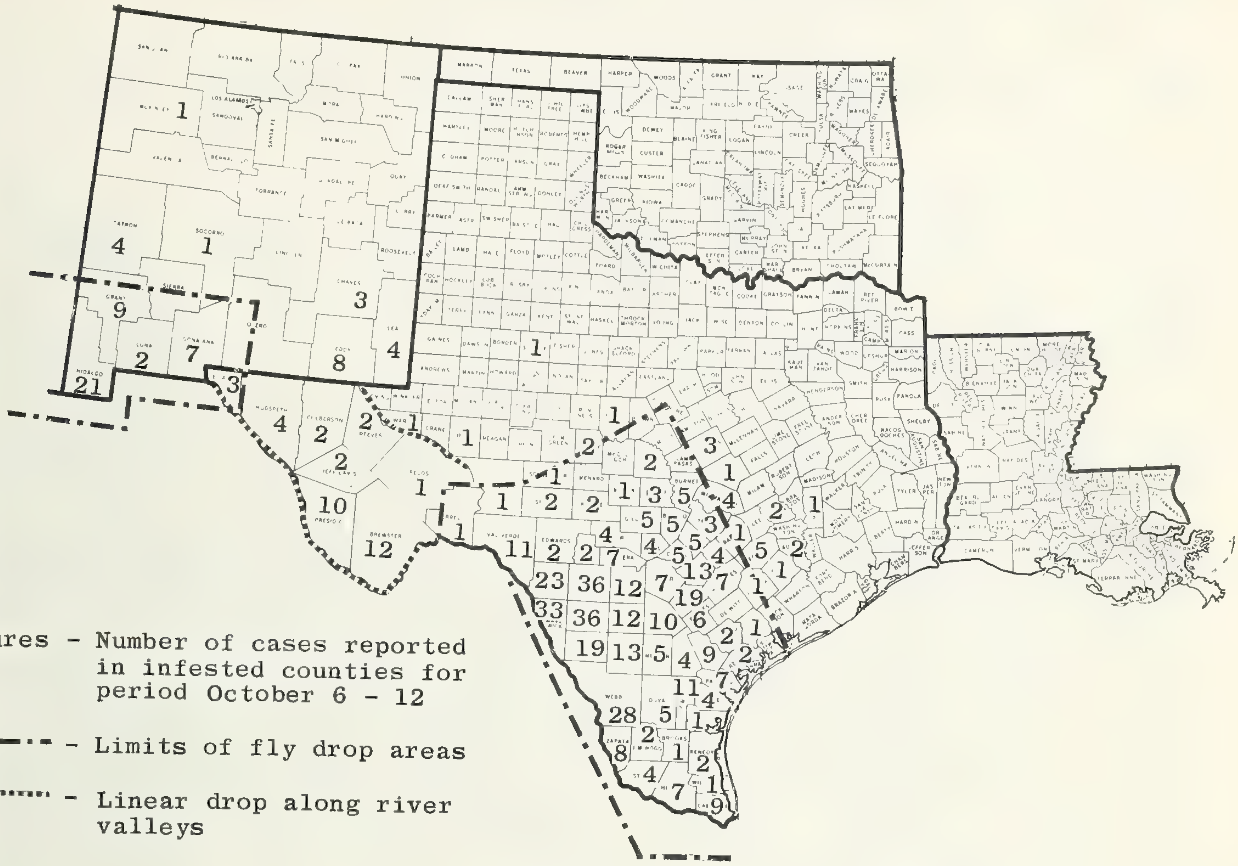
MOSQUITOES - UTAH - Annoying in some fields in Lewiston-Cornish area, Cache County. (Knowlton). NORTH DAKOTA - Culiseta inornata active during warm nights; some attempts at biting observed. Culex tarsalis and Culex pipiens also active. (Noetzel). TEXAS - Unspecified species annoying residents in Cooke and Brazos Counties. (Turney, Newton). ALABAMA - Mosquitoes apparently much lighter than most years, except in coastal and lake areas of State; however, populations appear to be considerably increased in east central counties. (Barwood).

HORN FLY (Haematobia irritans) - GEORGIA - Averaged 137 per animal on beef cows in Spalding County. (Roberts, Oct. 11).

HOUSE FLY (Musca domestica) - COLORADO - Large numbers gathering in windows causing concern among householders. (Thatcher). ALABAMA - Appearing in increased numbers in Tallapoosa County, especially around fishing areas of lakes. (Barwood).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period October 6 - 12, a total of 511 infestations (including one of unknown origin) was reported from 79 counties in TEXAS, and 64 infestations from 10 counties in NEW MEXICO. A total of 105,545,050 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



Figures - Number of cases reported in infested counties for period October 6 - 12

— · — · — - Limits of fly drop areas

▪▪▪▪▪▪▪▪▪ - Linear drop along river valleys

CATTLE GRUBS (Hypoderma spp.) - ALABAMA - Approximately 50 herds noted without close examination in 11 west and southwest counties; no grubs found in backs of animals. Should appear in mid-November and December. (Ledbetter).

FACE FLY (Musca autumnalis) - NORTH CAROLINA - Very numerous in home in Ashe County; homeowner has already killed sufficient number of flies to fill 2 half-gallon jars. (Gardner, Axtell).

MUSCOID FLIES - DELAWARE - Several species causing considerable annoyance in New Castle County by entering homes and garages in large numbers. (Lake, Burbutis).

PUSS CATERPILLAR (Megalopyge opercularis) - ARIZONA - Larvae annoying homeowners in Santa Cruz County. (Ariz. Coop. Sur.). NORTH CAROLINA - Larva "stung" woman in Burke County. (Speas, Robertson).

VESPID WASPS - UTAH - Yellow jackets and other species annoying in several areas in Provo Canyon, Utah County. (Knowlton). ALABAMA - *Vespula* spp. appear to be more of a problem than usual. (Pearson, Barwood, McGlohon, et al.).

TROPICAL RAT MITE (*Ornithonyssus bacoti*) - CALIFORNIA - Heavy in residence in Redding, Shasta County; causing severe reactions by biting children. Also infesting warehouse in Ryer Island, Sacramento County. (Cal. Coop. Rpt.).

BROWN DOG TICK (*Rhipicephalus sanguineus*) - DELAWARE - Infestations reported in several New Castle County homes. (MacCreary).

BLACK WIDOW SPIDER (*Latrodectus mactans*) - UTAH - Reported in and about homes in several communities in Salt Lake, Davis, Utah and Weber Counties. (Knowlton).

HOUSEHOLD AND STRUCTURAL INSECTS

BOXELDER BUG (*Leptocoris trivittatus*) - MARYLAND - Entering homes and causing nuisance at several localities in Prince Georges County. (U. Md., Ent. Dept.). VIRGINIA - Common in yards and creating nuisance around homes in Pulaski, Pulaski County (Oct. 4); Lawrenceville, Brunswick County (Sept. 30); Blackstone, Nottaway County (Oct. 2); Lynchburg, Campbell County (Oct. 7); and Blacksburg, Montgomery County (Oct. 10). (Tarpley, Derting, Basham, Schilling, Rowell). NORTH CAROLINA - Annoying to homeowner in Vance County. (Young, Woodlief, Robertson). MICHIGAN - Adults and nymphs continue annoying to homeowners in many localities in Lower Peninsula counties. (Dowdy). NORTH DAKOTA - Adults and nymphs becoming nuisance around homes over State. (N. D. Ins. Sur.). UTAH - Continues a problem in many localities over State. (Knowlton).

A COREID BUG (*Leptocoris rubrolineatus*) - NEVADA - Nymphs and adults congregating on trees and homes in Reno-Sparks area, Washoe County. (Bechtel).

AN EARWIG (probably *Labidura riparia*) - GEORGIA - Heavy in homes in Dublin, Laurens County. (Ashley, Oct. 9).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - NEVADA - Adults entering homes and other buildings in west central counties. (Coop. Rpt.).

CIGARETTE BEETLE (*Lasioderma serricorne*) - DELAWARE - Adults heavy in New Castle County home. (Connell).

BLACK CARPET BEETLE (*Attagenus piceus*)- DELAWARE - Larvae present in a New Castle County home. (MacCreary).

A SPRINGTAIL (*Drepanura knaba*) - UTAH - Numerous in several rooms of home at Bountiful, Davis County. Det by D. L. Wray. (Knowlton).

A MILLIPED - NORTH DAKOTA - An undetermined species being commonly observed and reported a nuisance around homes in New England area, Hettinger County. (N. D. Ins. Sur.).

TERMITES - VIRGINIA - Present in home in Farmville, Prince Edward County (Tarpley, Dudley, Oct. 10). UTAH - Unspecified subterranean species infesting 2 homes with attached garages at Logan, Cache County. (Knowlton).

STORED-PRODUCT INSECTS

Stored Grain Insects in Wyoming - Adults of GRANARY WEEVIL (*Sitophilus granarius*), RED FLOUR BEETLE (*Tribolium castaneum*) and CADELLE (*Tenebroides mauritanicus*) each found in one of 9 granaries inspected in Laramie County near Pine Bluffs; adults of SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) found in 2 of these same 9 granaries. (Marks).

RICE WEEVIL (Sitophilus oryzae) - NORTH CAROLINA - Problem in rye and wheat bins in McDowell County. (Love, Robertson).

MISCELLANEOUS INSECTS

WHITE-FRINGED BEETLES (Graphognathus spp.) - Surveys made in 20 FLORIDA counties; found for the first time in Liberty County. In GEORGIA, infestations found for the first time in Forsyth County, but this and previously reported infestation in Thomas County not large. Delimiting surveys completed in Madison, Morgan and Tuscaloosa Counties, ALABAMA, with no significant finds made. Found for the first time in Itawamba and Prentiss Counties, MISSISSIPPI; detection surveys made in 14 counties with heavy populations noted in several locations in southern part of State. Foliage treatment applied on all infested acerage in ARKANSAS during month; extensions of infested areas found in Craighead, Greene and Poinsett Counties. Inspection of 17 TENNESSEE counties revealed no increase in infested area except in Shelby and Davidson Counties. Emergence of adults 2 and 3 years after treatment causing considerable concern in Tennessee and other States. Treatment completed in McCormick County, SOUTH CAROLINA; some extensions of infestations found in other counties. Infestations found for the first time at Newton, Catawba County, and near Kings Mountain, Cleveland County, NORTH CAROLINA. Extensions of known infestations found in several other counties. (PPC, South. Reg., Sept. Rpt.). Collected for the first time in Virginia Beach, VIRGINIA (formerly Princess Anne County). (PPC, East. Reg., Sept. Rpt.).

JAPANESE BEETLE (Popillia japonica) - Trapping program completed in MICHIGAN; traps removed. In Detroit area, Wayne County, 161 acres treated; 7 new locations found in Detroit during month; additional specimens found Battle Creek area, Calhoun County, which increased size of infested area; 5 locations found infested in Washtenaw County; 3 adults collected in Grand Rapids, Kent County, and 8 new locations found in Monroe and Lenawee Counties. In ILLINOIS, one specimen collected for the first time in Clay County at Flora. Approximately 700 acres spot treated in Chicago, Cook County. (PPC, Cent. Reg., Sept. Rpt.). OHIO - Low grub population present throughout northeastern area; primarily second and third instars. Many eggs and larvae failed to survive due to continued drought. Grub counts approximately one-half those of 1962. (Polivka).

LARDER BEETLE (Dermestes lardarius) - COLORADO - Infested honey-house in Crowley County. (Hantsbarger).

A JAPANESE WEEVIL (Calomycterus setarius) - WISCONSIN - Few noted in field of alfalfa in Dane County. (Wis. Ins. Sur.).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae heavy on leaves of desert annuals in Morongo Valley, Riverside County. (Cal. Coop. Rpt.).

SAY STINK BUG (Chlorochroa sayi) - CALIFORNIA - Nymphs and adults medium on Russian-thistle stands in Riverside, Riverside County. (Cal. Coop. Rpt.).

A GRASS BUG (Arhyssus scutatus) - CALIFORNIA - Adults medium on weeds in Lakeport, Lake County. (Cal. Coop. Rpt.).

A SOLDIER FLY (Hermetia illucens) - CALIFORNIA - Heavy in earthworm beds under rabbit hutches; causing concern over loss of worms and eggs. (Cal. Coop. Rpt.).

A VINEGAR FLY (Drosophila sp.) - OHIO - Heavy on overripe fruit and decaying vegetation at roadside markets and in homes throughout State. (Lyon).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - Reported for first time in Galveston County, TEXAS. New areas of infestation found in Rapides and West Carroll Parishes, LOUISIANA; appraisal surveys in St. Landry and West Baton Rouge Parishes made, with mounds treated when found. Surveys in ARKANSAS revealed few mounds in Union and Ashley Counties in vicinity of known infestations. Treatments completed at Hazelhurst, Copiah County, and McComb, Pike County, MISSISSIPPI; appraisal surveys revealed no infestations on 3,000 acres in Covington, Rankin and Smith Counties. Surveys and spot treatment continued in peripheral areas of ALABAMA; no large infestations found. Treatment completed at Robins Air Force Base, Houston County, GEORGIA; appraisal surveys in Chatham and Effingham Counties negative. Extensions of infestations found in Horry, Jasper and Richland Counties, SOUTH CAROLINA. Treatment completed at Marine Air Facility at Jacksonville, Onslow County, NORTH CAROLINA; extension of infested area found in county. Negative inspections made in 9 TENNESSEE counties. (PPC, South. Reg., Sept. Rpt.).

CORRECTIONS

CEIR 13(42):1244 - NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - KANSAS - Should read Counts of 2-3 infested tips per tree noted on Scotch pine...

CEIR 13(42):1246 - AN ERIOPHYID MITE (Eriophyes loewi) - WASHINGTON - Delete note.

ADDITIONAL NOTES

OKLAHOMA - Light populations of APPLE GRAIN APHID (Rhopalosiphum fitchii) noted in small grains in Payne and Logan Counties. This is first record for this season and it is about 15 days earlier than the November 1 average based on survey records of past 8 years. Light populations of ENGLISH GRAIN APHID (Macrosiphum avenae) noted for first time this season in early planted small grains in Payne and Logan Counties. This is almost one month earlier than average first occurrence of November 13 based on survey record of past 5 years. SPOTTED ALFALFA APHID (Therioaphis maculata) populations continue at about same level as last week in Perkins area on seedling alfalfa; ranged 50-75 per square foot. Counts on established stands ranged 350-500 per 10 sweeps in Payne County with lower counts of 25 per 10 sweeps present in Logan County. Counts of 70 per 10 sweeps noted in Tillman County; moderate infestations in Caddo County (west central). Light, scattered counts of CORN EARWORM (Heliothis zea) ranged 0-4 per 10 sweeps on alfalfa in Payne and Logan Counties. Heavy populations of GARDEN WEBWORM (Loxostege similalis) on alfalfa in Cotton County (southwest) with light to moderate infestations reported in Washita County (west central). None observed in fields checked in Payne and Logan Counties (north central). FALL ARMYWORM (Laphygma frugiperda) heavy on seedling alfalfa in Caddo County; some activity also reported on small grains in Kingfisher County. Several species of GRASSHOPPERS continue causing light damage to small grains around field margins. PINK BOLLWORM (Pectinophora gossypiella) more general throughout State than in past 2 seasons. Gin-trash inspections continued positive in counties surveyed; lint-cleaner inspections positive in Tillman County. Heavy populations of WALKINGSTICK (Diapheromera femorata) defoliating oaks on Ouachita National Forest area, Le Flore County, northward to Ottawa County. Damage to elm and pecan trees by TWIG GIRDLER (Oncideres cingulata) continues from Ottawa County (northeast) to Bryan County (south central). Several species of APHIDS present on variety of ornamentals in Stillwater area, Payne County. HORN FLY (Haematobia irritans) populations down appreciably in Stillwater area from last week; ranged 50-500 per animal in Bryan County. HOUSE FLY (Musca domestica) continues annoying around homes and public buildings with onset of cooler weather. (Okla. Coop. Sur.).

LIGHT TRAP COLLECTIONS

	Temperature °F	Precipitation	Type of trap *	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	Heliothis zea (bollworm, corn earworm)	Laphygma frugiperda (fall armyworm)	Loxostege commixtalis (alfalfa webworm)	Loxostege similalis (garden webworm)	Loxostege sticticalis (beet webworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Protoparce quinquemaculata (tomato hornworm)	Protoparce sexta (tobacco hornworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Trichoplusia ni (cabbage looper)	Major crop **
COLORADO																								
Rocky Ford 10/11-18										71											23			
FLORIDA																								
Gainesville 10/17			BL	2					4		2							11			41			
GEORGIA																								
Tifton 10/10-16			BL							4	53													
KANSAS																								
Garden City 10/9,11				13		87		1			342						4	4			33			
Hays 10/17				3		5		1			27						1	5			6			
Manhattan 10/12-17				18		18		7			318						7	24			73			
Mound Valley 10/17				3							69										7			
Wathena 10/4-7, 10-11, 14-15				44		3		18			698						11	19			48			
MISSISSIPPI																								
Stoneville 10/11-17	54-94	0.10	MV	68					276	12	1708	192					12	196			140	868	336	
Stoneville 10/11-17	54-94	0.10	BL	128			3		524	20	2736	236					16	172			240	1584	332	
NEBRASKA																								
Scotts Bluff Expt. Sta. 10/2-8				18		99					9						15				12			
NORTH DAKOTA																								
Fargo 10/12-18				1		1					18										1			
SOUTH CAROLINA																								
Clemson 10/5-11				1					1		13	3					3	5			3			
Charleston 10/14-20	48-82	none	BL	31					8		30	7						10			115		4	
TENNESSEE (Counties)																								
Madison 10/1-7											212								1		8			
Maury 10/1-7				16							32										16			
Robertson 10/1-7				25							22						2	4		1	21			
Cumberland 10/1-7				37					24		44	1					1	9			17			
Greene 10/1-7				2					1								1		1	2	5			
Blount 10/1-7				14							32									1	12			
Johnson 10/1-7				4							1						2	2						
TEXAS																								
Waco 10/12-18				10			4		78		527	388					52	96			36	416	48	
Brownsville 10/1-16			6BL	441			103		279	20	2513	1461					671	621	50	131	1560		223	

(Continued on page 1276)

* BL = blacklight; I = incandescent; MV = mercury vapor ; O = other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn; grain = small grains; leg. = legumes (unspecified); lett. = lettuce; pean. = peanut; pepp. = pepper; pot. = potatoes; SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

LIGHT TRAP COLLECTIONS

	Temperature °F	Precipitation	Type of trap *	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	Heliothis zea (bollworm, corn earworm)	Laphygma frugiperda (fall armyworm)	Loxostege commixtalis (alfalfa webworm)	Loxostege similalis (garden webworm)	Loxostege sticticalis (beet webworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Protoparce quinquemaculata (tomato hornworm)	Protoparce sexta (tobacco hornworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Trichoplusia ni (cabbage looper)	Major crop **
WISCONSIN																								
Middleton 10/8-15			BL	17							19						7				12			
Madison 10/8-15			BL	22							40						10				21			
Mazomanie 10/7-14			BL	27							51						16				23			
De Forest 10/8-15			BL	8							13						19				10			

Weather of the week ending October 21 (continued from page 1260)
normal. Over Georgia and Florida, temperatures averaged from 1° to 4° below normal. Temperatures averaged above normal over the rest of the Nation. They averaged 10° or more above normal over most of the central and northern Great Plains. A few stations, Fargo, North Dakota, Kansas City, Missouri, and Moline, Illinois, registered temperatures which averaged 15° above normal. At the end of the week: Fair skies and mild temperatures prevailed over the Far Southwest and the southern Great Plains. Strong winds and heavy rains battered the north Pacific coast. Scattered thundershowers dotted the central Great Plains. Light rains and brisk winds continued at Cape Hatteras, North Carolina, with some threat of wind and rain along the coast northward to New England. Cloudiness increased over the northeast quarter of the Nation. (Summary supplied by U.S. Weather Bureau).

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Grain sorghum (Commodity) IN Oklahoma (State or District) DURING 1962 (Year)

A.	Pest or pest complex		Corn earworm, sorghum webworm, fall armyworm, corn leaf aphid, southwestern corn borer
B.	Number of acres [a] produced (From CRS)	No.	658,000 (grain) (71%) 266,000 (forage) (29%)
C.	Average yield per acre [a] (From CRS)	Units/	30.0 bu. (grain) 8.5 ton (forage)
D.	Price[b] per unit (bu./ton)[c] (From CRS)	$/	1.01 bu. (grain) 16.50 ton (forage
E.	Acres [a] needing control	No.	317,520 (grain & forage)
F.	Acres [a] treated	No.	60,330 (grain & forage)
G.	Reduction due to not treating where needed:		
	H. Loss in yield, percent	%	29 (grain) 23 (forage)
	I. Loss in yield, units per acre [a], C x H	Units/	8.7 bu. (grain) 1.955 ton (forage)
	J. Loss in yield, $ per acre [a], D x I	$/	8.79 (grain) 32.18 (forage)
	K. Loss in quality, $ per -- [a]	$/	---
L.	Yield loss for all acres [a], (E-F) x I	Units	1,588,664 bu. (grain) 145,813 ton (forage)
M.	Control cost, $ per acre [a]	$/	2.58
N.	Control cost for all acres [a], F x M	$	155,650
O.	Yield loss for all acres [a], (E-F) x J	$	1,605,098 (grain) 2,400,145 (forage)
P.	Quality loss for all -- [a], (E-F) x K	$	---
Q.	Combined control cost and losses, N + O + P	$	4,160,893

Comment:

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Sidney E. Kunz

Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Wheat (Commodity) IN Oklahoma (State or District) DURING 1962 (Year)

A.	Pest or pest complex Greenbug, cutworms, mites, Hessian fly	
B.	Number of acres[a] produced (From CRS)	No. 3,787,000
C.	Average yield per acres[a] (From CRS)	Units/ 19.0 bu.
D.	Price[b] per unit (bu.)[c] (From CRS)	$/ 2.05
E.	Acres[a] needing control	No. 1,067,935
F.	Acres[a] treated	No. 259,500
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 22
	I. Loss in yield, units per acre[a], C x H	Units/ 4.18 bu.
	J. Loss in yield, $ per acre[a], D x I	$/ 8.57
	K. Loss in quality, $ per --[a]	$/ --
L.	Yield loss for all acres[a], (E-F) x I	Units 3,379,258 bu.
M.	Control cost, $ per acre[a]	$/ 2.04
N.	Control cost for all acres[a], F x M	$ 529,380
O.	Yield loss for all acres[a], (E-F) x J	$ 6,928,288
P.	Quality loss for all --[a], (E-F) x K	$ --
Q.	Combined control cost and losses, N + O + P	$ 7,457,668

Comment: Although control costs were reduced over last year, yield loss up due to higher price per bu. (+23/bu.).

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Sidney E. Kunz

Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Alfalfa (Commodity) IN Oklahoma (State or District) DURING 1962 (Year)

A.	Pest or pest complex Pea aphid, corn earworm, spotted alfalfa aphid, webworms	
B.	Number of acres[a] produced (From CRS)	No. 418,000
C.	Average yield per acre[a] (From CRS)	Units/ 2.6 ton
D.	Price[b] per unit (ton)[c] (From CRS)	$/ 20.50
E.	Acres[a] needing control	No. 238,260
F.	Acres[a] treated	No. 66,710
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 33
	I. Loss in yield, units per acre[a], C x H	Units/ .86 ton
	J. Loss in yield, $ per acre[a], D x I	$/ 17.63
	K. Loss in quality, $ per --[a]	$/ --
L.	Yield loss for all acres[a], (E-F) x I	Units 147,533 ton
M.	Control cost, $ per acre[a]	$/ 3.61
N.	Control cost for all acres[a], F x M	$ 240,823
O.	Yield loss for all acres[a], (E-F) x J	$ 3,024,426.50
P.	Quality loss for all --[a], (E-F) x K	$ --
Q.	Combined control cost and losses, N + O + P	$ 3,265,249.50

Comment:

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Sidney E. Kunz

Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Cotton (Commodity) IN Oklahoma (State or District) DURING 1962 (Year)

A.	Pest or pest complex	Boll weevil, bollworm, cotton fleahopper, aphids, thrips
B.	Number of acres[a] produced (From CRS)	No. 705,000 planted, 645,000 harvested 1/
C.	Average yield per acre[a] (From CRS)	Units/ 274 lb. 1/
D.	Price[b] per unit (lb.)[c] (From CRS)	$/ .294 lb. 2/
E.	Acres[a] needing control	No. 585,150
F.	Acres[a] treated	No. 374,500
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 31
	I. Loss in yield, units per acre[a], C x H	Units/ 85 lbs.
	J. Loss in yield, $ per acre[a], D x I	$/ 25.00
	K. Loss in quality, $ per --[a]	$/ --
L.	Yield loss for all acres[a], (E-F) x I	Units 17,905,250 lbs.
M.	Control cost, $ per acre[a]	$/ 13.55
N.	Control cost for all acres[a], F x M	$ 5,074,475
O.	Yield loss for all acres[a], (E-F) x J	$ 5,266,250
P.	Quality loss for all --[a], (E-F) x K	$ --
Q.	Combined control cost and losses, N + O + P	$ 10,340,725

Comment: 1/ Based on 1961 figures.

2/ Based on 1962 figures.

Entries in B & C not available from CRS at time losses computed.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Sidney E. Kunz

Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Beef (Commodity) IN Oklahoma (State or District) DURING 1962 (Year)

A.	Pest or pest complex Horn fly, ticks, horse flies, stable fly, lice	
B.	Number of head[a] produced (From CRS)	No. 3,764,000
C.	Average yield per head[a] (From CRS)	Units/ 372 lbs.
D.	Price[b] per unit (cwt.)[c] (From CRS)	$/ 20.70
E.	Head[a] needing control	No. 3,387,600
F.	Head[a] treated	No. 2,100,300
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 14
	I. Loss in yield, units per head[a], C x H	Units/ 52 lbs.
	J. Loss in yield, $ per head[a], D x I	$/ 10.75
	K. Loss in quality, $ per --[a]	$/ --
L.	Yield loss for all head[a], (E-F) x I	Units 66,939,600 lbs.
M.	Control cost, $ per head[a]	$/ 1.59
N.	Control cost for all head[a], F x M	$ 3,339,477
O.	Yield loss for all head[a], (E-F) x J	$ 13,838,475
P.	Quality loss for all --[a], (E-F) x K	$ --
Q.	Combined control cost and losses, N + O + P	$ 17,177,952

Comment:

[a] Acres, head of cattle or other producing units used by Crop Reporting Service.

[b] Season average price per unit as given by CRS (describe basis).

[c] Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Sidney E. Kunz

Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Dairy cows (Commodity) IN Oklahoma (State or District) DURING 1962 (Year)

A.	Pest or pest complex Horn fly, stable fly, lice, ticks			
B.	Number of head[a] produced	(From CRS)	No.	264,000
C.	Average yield per head[a]	(From CRS)	Units/	6,250 lbs.
D.	Price[b] per unit (cwt.)[c]	(From CRS)	$/	4.21
E.	Head[a] needing control		No.	245,500
F.	Head[a] treated		No.	191,100
G.	Reduction due to not treating where needed:			
	H. Loss in yield, percent		%	16
	I. Loss in yield, units per head[a],	C x H	Units/	10 cwt.
	J. Loss in yield, $ per head[a],	D x I	$/	42.10
	K. Loss in quality, $ per --[a]		$/	--
L.	Yield loss for all head[a],	(E-F) x I	Units	544,000 cwt.
M.	Control cost, $ per head[a]		$/	1.99
N.	Control cost for all head[a],	F x M	$	380,290
O.	Yield loss for all head[a],	(E-F) x J	$	2,290,240
P.	Quality loss for all --[a],	(E-F) x K	$	--
Q.	Combined control cost and losses,	N + O + P	$	2,670,530

Comment:

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Sidney E. Kunz

Date 5-20-63

Losses in Yield of Corn Grown for Grain Due to Insects and Birds in Indiana (Indiana Fall Corn Insect Survey, 1962)[a]

Prepared by R. T. Everly

Area	Counties	Fields	Acres planted in '000s	Yield in '000s	Total loss[b]		Av. loss per acre
			Acres	Bushels	Bushels[c]	Dollars	Dols.
NNW	7	16	507.7	42,548.0	2,986,870	2,688,183	5.29
NNC	5	11	321.3	23,091.1	1,094,518	985,066	3.06
NNE	6	10	272.3	18,900.8	661,528	595,375	2.19
NW	6	15	478.8	43,326.1	1,078,989	971,090	2.03
NC	8	10	542.6	49,243.5	497,359	447,623	.82
NE	10	19	505.4	41,453.9	505,738	455,164	.90
SW	8	13	295.9	24,985.9	2,723,463	2,451,117	8.28
SC	7	11	216.3	17,913.5	1,954,363	1,758,927	8.13
SE	9	16	484.8	42,718.1	2,563,513	2,307,162	4.76
SSW	10	17	425.0	31,192.7	4,064,409	3,657,968	8.61
SSC	7	10	136.1	8,991.6	330,891	297,802	2.19
SSE	9	10	111.8	8,070.8	309,919	278,927	2.49
NN	18	37	1,101.3	84,539.9	4,742,916	4,268,624	3.88
N	24	49	1,526.8	134,023.5	2,082,086	1,873,877	1.23
S	24	40	997.0	85,617.5	7,241,339	6,517,205	6.54
SS	26	37	672.9	48,255.1	4,705,219	4,234,697	6.29
West	31	61	1,707.4	142,052.7	10,853,731	9,768,358	5.72
Central	27	47	1,216.3	99,239.7	3,877,131	3,489,418	2.87
East	34	55	1,374.3	111,143.6	4,040,698	3,636,628	2.65
State	92	163	4,298.0	352,436.0	18,771,560	16,894,404	3.93

[a] County acreages and yields supplied by Dr. R. E. Straszheim (U.S.D.A.), Department of Agricultural Statistics.
[b] Based on average prices of a bushel of corn on November 15 and December 17, 1962 ($.90 per bushel).
[c] See following page for breakdown of total bushel loss due to birds, European corn borer, corn earworm, corn leaf aphid and Angoumois grain moth.

Losses in Yield of Corn Grown for Grain Due to Insects and Birds in Indiana (continued)

Area	Losses due to									
	Birds		European corn borer		Corn earworm		Corn leaf aphid		Angoumois grain moth	
	Pct.	Bushels	Pct.	Bushels	Pct.	Bushels	Pct.	Bushels	Pct.	Bushels
NNW	.02	8,510	2.6	1,106,248	.3	127,644	4.1	1,744,468	0.	0
NNC	.04	9,236	.7	161,638	.1	23,091	3.9	900,553	0.	0
NNE	.60	113,405	.4	75,603	.2	37,802	2.3	434,718	0.	0
NW	.29	125,646	1.0	433,261	.2	86,652	1.0	433,261	0.	0
NC	.01	4,924	.5	246,218	.2	98,487	.3	147,730	0.	0
NE	0.	0	.6	248,723	.1	41,454	.5	207,270	.02	8,291
SW	0.	0	1.0	249,859	1.2	299,831	8.7	2,173,773	0.	0
SC	1.00	179,135	.7	125,394	1.3	232,876	7.9	1,415,665	.01	1,791
SE	.20	85,436	.8	341,745	.1	42,718	4.9	2,093,187	0.	427
SSW	1.12	349,358	.9	280,734	2.0	623,854	8.8	2,744,958	.21	65,505
SSC	.70	62,941	.9	80,924	1.7	152,857	0.	0	.38	34,168
SSE	1.70	137,204	.2	16,142	.8	64,566	.9	72,637	.24	19,370
NN	.22	131,151	1.3	1,343,489	.2	188,537	3.8	3,079,739	0.	0
N	.10	130,570	.7	928,202	.2	226,593	.6	788,261	.01	8,291
S	.40	264,571	.8	716,998	.9	575,425	7.2	5,682,625	0.	2,218
SS	1.17	549,503	.7	377,800	1.5	841,277	3.2	2,817,595	.36	119,043
West	.36	483,514	1.4	2,070,102	.9	1,137,981	5.6	7,096,460	.05	65,505
Central	.44	256,236	.7	614,174	.8	507,311	3.0	2,463,948	.16	35,959
East	.62	336,045	.5	682,213	.3	186,540	2.2	2,807,812	.06	28,088
State	.47	1,075,795	.8	3,366,489	.7	1,831,832	3.6	12,368,220	.09	129,552

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

INDIAN SUGARCANE LEAFHOPPER (*Pyrilla perpusilla* (Walker))[1]

Economic Importance: This fulgorid planthopper is one of the most destructive pests of sugarcane and corn in Pakistan and India, and is common in Afghanistan. Adults and nymphs suck plant juices from the underside of the leaves and retard plant growth if not checked. The pest is capable of reducing the sucrose content of the juice of sugarcane by about 1.5 to 2 percent or even more. Honeydew is also sometimes a problem. In addition, cattle refuse to feed on sugarcane, corn and sorghum damaged by this pest. In 1953-1954, a scheme costing 1,071,000 rupees was organized to control the pest in the Peshawar Region of Pakistan. Seventy thousand areas of sugarcane and fifty thousand acres of corn were treated that year, which resulted in a saving of approximately 6 million rupees. Recently, Fennah (4) made a study of the species of the genus *Pyrilla* Stål found in Ceylon and India. He concluded that two polytypic species are present: *P. perpusilla* (Walker), widespread in India and now recognized as extending to Ceylon and to Thailand, and *P. aberrans* (Kirby) (strict sense), formerly regarded as being confined to Ceylon, but now found to occur also in south India. Fennah described and named 10 geographical subspecies of the former and 5 of the latter. Included is *P. perpusilla pusana* (Distant) which is represented by 3 color forms, each predominant in the population at a particular period of the year.

Indian Sugarcane Leafhoppers
on Sugarcane Leaf

Hosts: Sugarcane, wheat, barley, oats, sorghum, corn, Sudan grass and other native and cultivated grasses.

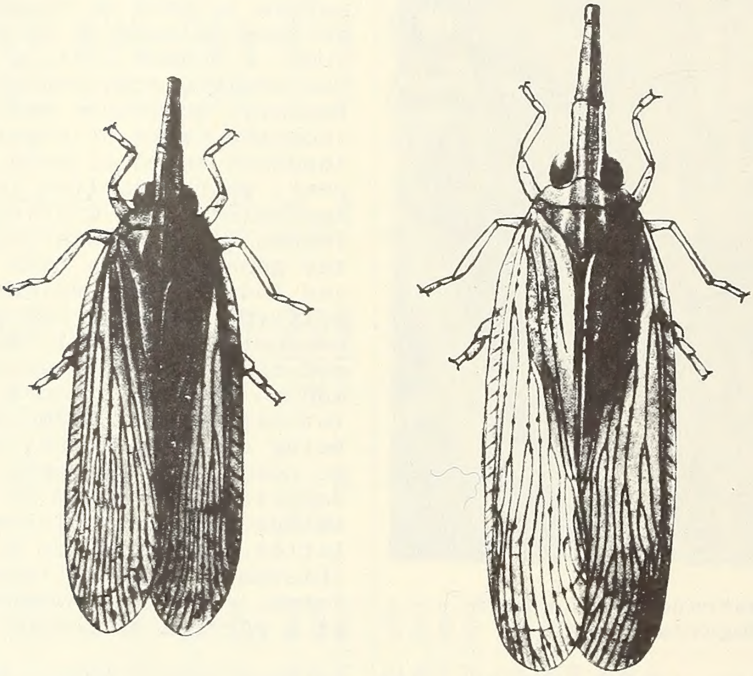
Distribution: India, Pakistan, Afghanistan, Ceylon and east to Thailand.

Life History and Habits: Females lay up to 773 eggs. They are laid in clusters on the host plants and are covered with whitish, fluffy material. Eggs hatch in 7-12 days during April-October and 20-41 days during November-March. There are 5 nymphal stages. The nymphal stage occupies 24-65 days during April-September and 78-208 days during October-March. The pest has 3-4 broods a year; the last two (when present) overlapping each other. Adults are most common during late March. Eggs are laid on sprouting sugarcane in April. From May to December, all stages of the pest are encountered, but from January to the latter part of March, nymphs predominate. When sugarcane is harvested, the pests migrate to other susceptible crops such as wheat, barley, oats and other grasses. When the small grains are harvested, they migrate to sugarcane, corn and sorghum.

---

[1] Also called sugarcane pyrilla
Homoptera:Fulgoroidea:Lophopidae

Description: ADULT (P. perpusilla perpusilla (Wlk.)) - Body and legs ochraceous, paler beneath than above; termina yellowish-white, semi-opaque, apical area and outer claval margin speckled with minute black spots; wings pale hyaline; dorsal ridge to cephalic process much less prominent in front of the central trasverse ridge than behind it. Length (excl. tegm.) 9 mm. or three-eighths of an inch. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies.)



Male and Female of Indian Sugarcane Leafhopper (Pyrilla perpusilla (Walker))

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Figures: Male and female from Pruthi, H. S. 1937. Ind. J. of Agr. Sci. 7(3): 511-512, plate 44.

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